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Marine Physical Laboratory

LOW POWER DIGITAL RECORDER DEVELOPMENT

W. S. Hodgkiss

Final Report to the
Office of Naval Research
Contract N00014-89-D-0142 (DO#22)

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LOW POWER DIGITAL RECORDER DEVELOPMENT

W. S. Hodgkiss (Principal Investigator)

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RESEARCH SUMMARY

The objective of this program was to assist NOSC in the development and testing of a digital recorder suitable for extended low-power remote operations where low frequency acoustic or engineering data must be recorded.

The Marine Physical Laboratory has had extensive experience in low-power data collection instrumentation. As an example, the new generation of ocean bottom seismometers (OBSs) designed and fabricated by MPL required a low-power design suitable for operation on the deep sea floor. Recently, MPL has been involved in the development of an autonomous recording capsule (ARC) for use where substantial amounts of data are to be recorded [1].

In this program, MPL assisted NOSC in the development and testing of a low-power, digital data recorder. First, the digital data recorder specifications were defined. In order to preserve flexibility for future operations, it was decided to modify the design described in [1]. An Exabyte 8500, 5 GB capacity, 8 mm cassette tape drive was used as the recording medium. Second, a complete recording system (along with a spare) was fabricated and tested. Subsequently, these recording systems were deployed by NOSC during an engineering sea test.

References

[1] R. Currier, R. Harriss, C. Nickles, and W. Hodgkiss, "An autonomous seafloor recording capsule," Proc. OCEANS'91: 1681-1686 (1991).

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